Test Report

(No.) : CE/2017/55480 (Date) : 2017/06/01

HOSONIC ELECTRONIC CO., LTD.
84 23-1
NO.23-1, LN.84, JUNYING ST., SHULIN DIST., NEW TAIPEI CITY 23863, TAIWAN

(The following sample(s) was/were submitted and identified by/on behalf of the applicant as)

(Sample Submitted By)	:	(HOSONIC ELECTRONIC CO., LTD.)
(Sample Description)	:	SMD CRYSTAL SERIES AND SMD CRYSTAL OSCILLATOR SERIES
(Style/Item No.)	:	SEAM SEALING CRYSTAL AND SMD OSC/VCXO/PECL/LVDS
(Sample Receiving Date)	:	2017/05/24
(Testing Period)	:	2017/05/24 TO 2017/06/01

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(Test Results) (Please refer to following pages).

Troy Chang / Manager - Tech
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei

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(Test Results)

(PART NAME)No.1 (MIXED ALL PARTS)

(Test Items)	(Unit)	(Method)	(MDL)	(Result) No.1
/ Cadmium (Cd)	mg/kg	IEC 62321-5 (2013) . / With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
/ Lead (Pb)	mg/kg	IEC 62321-5 (2013) . / With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n.d.
/ Mercury (Hg)	mg/kg	IEC 62321-4 (2013) . / With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n.d.
/ Hexavalent Chromium Cr(VI) ( )	mg/kg	IEC 62321-7-2 (2017) UV-VIS IEC 62321-5 (2013) ICP-AES . / With reference to IEC 62321-7-2 (2017) and performed by UV-VIS. With reference to IEC 62321-5 (2013) and performed by ICP-AES.	8	n.d.
/ Antimony (Sb)	mg/kg	US EPA 3052 (1996) . / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	n.d.
/ Arsenic (As)	mg/kg	US EPA 3052 (1996) . / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	n.d.

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(Test Items)	(Unit)	(Method)	(MDL)	(Result) No.1
/ Beryllium (Be)	mg/kg	US EPA 3052 (1996) . / With reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	n.d.
/ Sum of PBBs	mg/kg	IEC 62321-6 (2015) / . / With reference to IEC 62321-6 (2015) and performed by GC/MS.	-	n.d.
/ Monobromobiphenyl	mg/kg		5	n.d.
/ Dibromobiphenyl	mg/kg		5	n.d.
/ Tribromobiphenyl	mg/kg		5	n.d.
/ Tetrabromobiphenyl	mg/kg		5	n.d.
/ Pentabromobiphenyl	mg/kg		5	n.d.
/ Hexabromobiphenyl	mg/kg		5	n.d.
/ Heptabromobiphenyl	mg/kg		5	n.d.
/ Octabromobiphenyl	mg/kg		5	n.d.
/ Nonabromobiphenyl	mg/kg		5	n.d.
/ Decabromobiphenyl	mg/kg		5	n.d.
/ Sum of PBDEs	mg/kg		-	n.d.
/ Monobromodiphenyl ether	mg/kg		5	n.d.
/ Dibromodiphenyl ether	mg/kg		5	n.d.
/ Tribromodiphenyl ether	mg/kg		5	n.d.
/ Tetrabromodiphenyl ether	mg/kg		5	n.d.
/ Pentabromodiphenyl ether	mg/kg		5	n.d.
/ Hexabromodiphenyl ether	mg/kg		5	n.d.
/ Heptabromodiphenyl ether	mg/kg		5	n.d.
/ Octabromodiphenyl ether	mg/kg		5	n.d.
/ Nonabromodiphenyl ether	mg/kg		5	n.d.
/ Decabromodiphenyl ether	mg/kg		5	n.d.

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(Test Items)	(Unit)	(Method)	(MDL)	(Result) No.1
/ BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg	IEC 62321-8 (2017) / . / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
/ DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg		50	n.d.
(2-) / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg		50	n.d.
/ DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg		50	n.d.
/ DIDP (Di-isodecyl phthalate) (CAS No.: 26761-40-0; 68515-49-1)	mg/kg		50	n.d.
/ DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	mg/kg		50	n.d.
/ DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	mg/kg		50	n.d.
/ DMP (Di-methyl phathalate) (CAS No.: 131-11-3)	mg/kg		50	n.d.
/ DEP (Di-ethyl phthalate) (CAS No.: 84-66-2)	mg/kg		50	n.d.
/ Di-n-pentyl phthalate (CAS No.: 131-18-0)	mg/kg		50	n.d.
/ DCHP (Di-cyclohexyl phthalate) (CAS No.: 84-61-7)	mg/kg		50	n.d.
/ DPhP (Diphenyl phthalate) (CAS No.: 84-62-8)	mg/kg		50	n.d.

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(Test Items)	(Unit)	(Method)	(MDL)	(Result) No.1
/ DBzP (Dibenzyl phthalate) (CAS No.: 523-31-9)	mg/kg	IEC 62321-8 (2017) / . / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.
/ DIOP (Di-isooctyl phthalate) (CAS No.: 27554-26-3)	mg/kg		50	n.d.
/ DPrP (Di-propyl phthalate) (CAS No.: 131-16-8)	mg/kg		50	n.d.
/ DNHP (Di-n-hexyl phthalate) (CAS No.: 84-75-3)	mg/kg		50	n.d.
/ DNNP (Di-n-nonyl phthalate) (DNP) (CAS No.: 84-76-4)	mg/kg		50	n.d.
/ Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	IEC 62321 (2008) / . / With reference to IEC 62321 (2008). Analysis was performed by GC/MS.	5	n.d.
/ Halogen				
( ) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	BS EN 14582 (2016) . / With reference to BS EN 14582 (2016). Analysis was performed by IC.	50	n.d.
( ) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg		50	n.d.
( ) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50	n.d.
( ) / Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.

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(Test Items)	(Unit)	(Method)	(MDL)	(Result) No.1
/ Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	US EPA 3550C (2007) / . / With reference to US EPA 3550C (2007). Analysis was performed by LC/MS.	10	n.d.
/ PFOA (CAS No.: 335-67-1)	mg/kg	US EPA 3550C (2007) / . / With reference to US EPA 3550C (2007). Analysis was performed by LC/MS.	10	n.d.

(Note)

1. mg/kg = ppm 0.1wt% = 1000ppm
2. n.d. = Not Detected ( )
3. MDL = Method Detection Limit ( )
4. "-" = Not Regulated ( )
5. ( )
   n.d.
   The result of Cr(VI) is "n.d." as the result of Chromium (Cr) is less than the MDL of Cr(VI), and confirmation test of Cr(VI) is not required.

   If the Chromium (Cr) content is not less than the MDL of Cr(VI), confirmation test of Cr(VI) is required.
6. . (The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)

PFOS (Reference Information) : POPs - (EU) 757/2010

PFOS 0.001%(10ppm) 0.1%(1000ppm)
1μg/m²

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1μg/m².)

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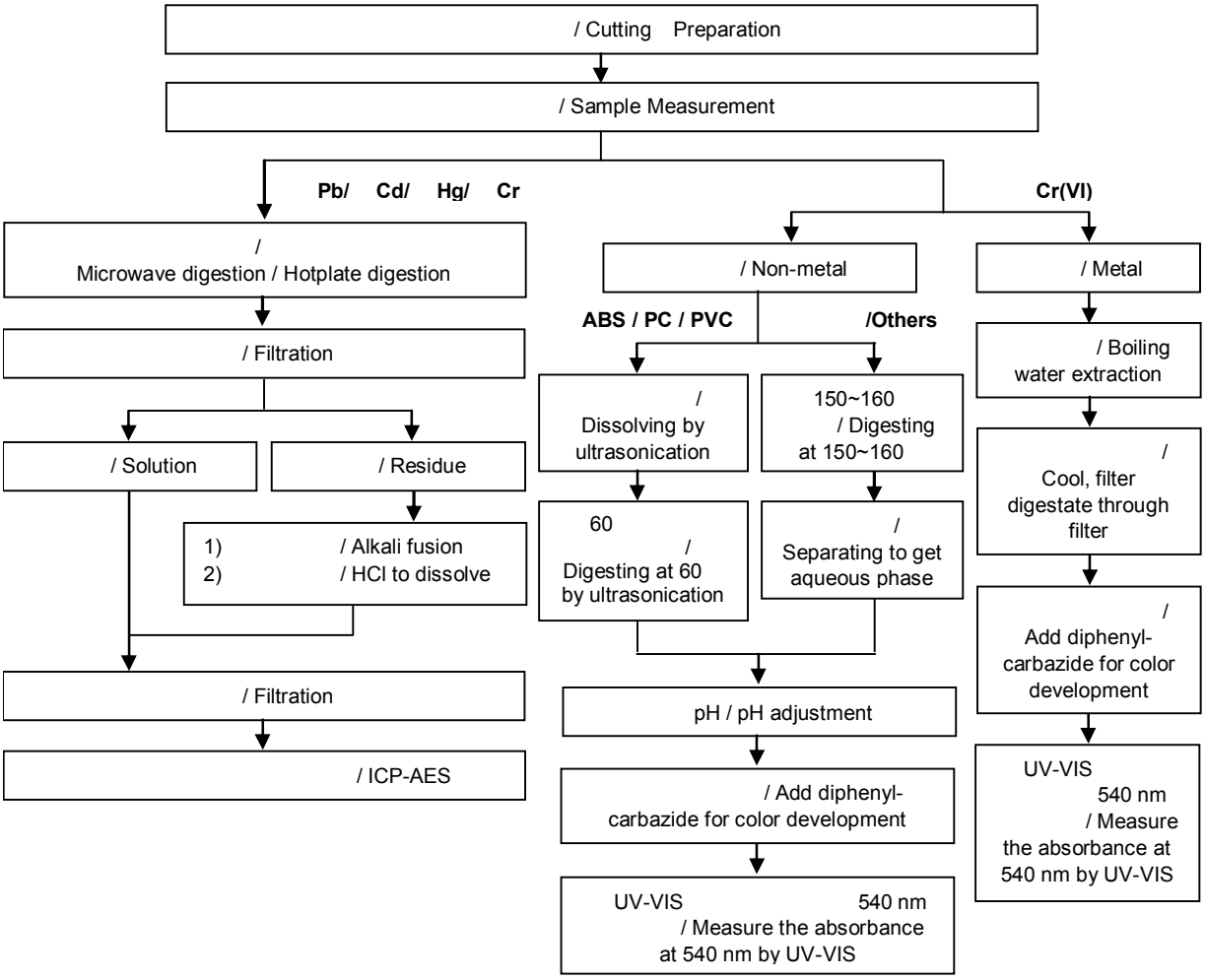
/ Analytical flow chart of Heavy Metal

These samples were dissolved totally by pre-conditioning method according to below flow chart. Cr^{6+} test method excluded

- / Technician : JR Wang
- / Supervisor: Troy Chang



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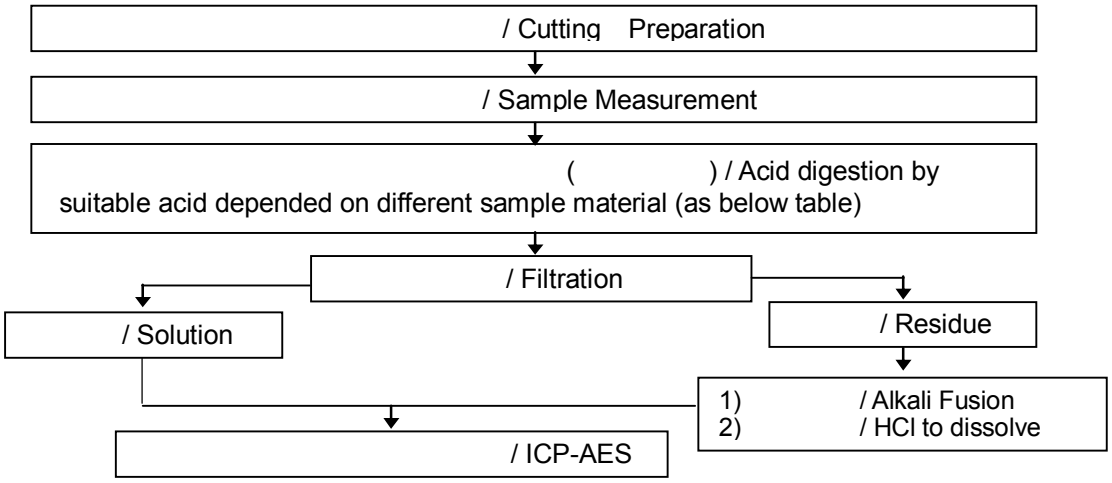
/ These samples were dissolved totally by pre-conditioning method according to below flow chart.

- / Technician: JR Wang
- / Supervisor: Troy Chang

ICP-AES
(Flow Chart of digestion for the elements analysis performed by ICP-AES)



, , , / Steel, copper, aluminum, solder	, , , , / Aqua regia, HNO_3, HCl, HF, H_2O_2
/ Glass	, / HNO_3/HF
, , , / Gold, platinum, palladium, ceramic	/ Aqua regia
/ Silver	/ HNO_3
/ Plastic	, , , / H_2SO_4, H_2O_2, HNO_3, HCl
/ Others	/ Added appropriate reagent to total digestion

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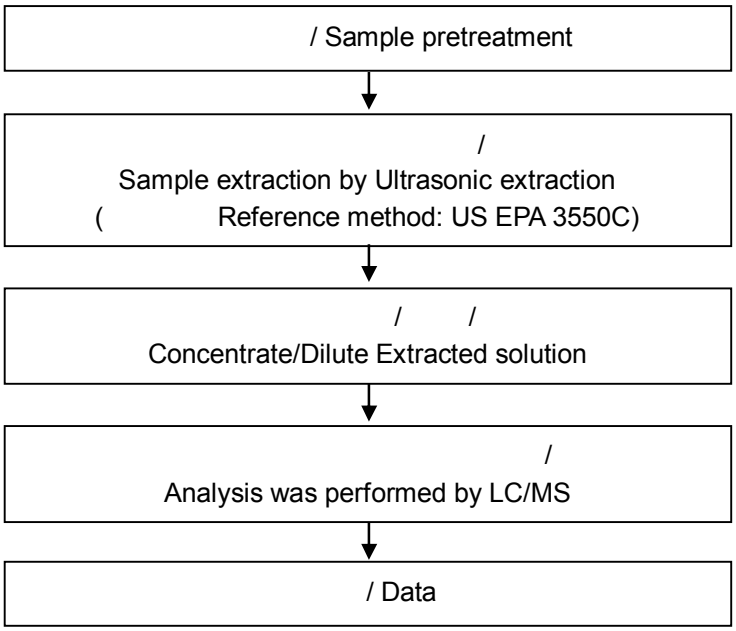
/ / Analytical flow chart - PFOA/PFOS

- / Technician: Yaling Tu
- / Supervisor: Troy Chang



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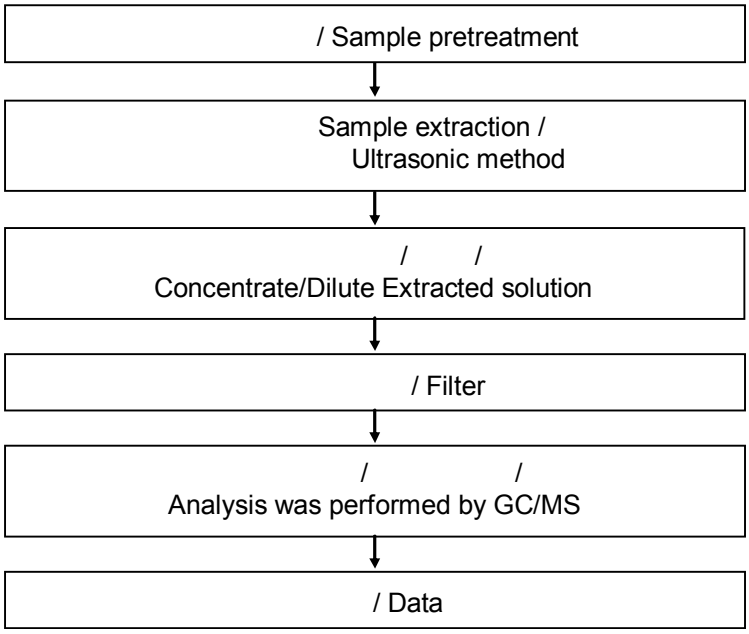
/ Analytical flow chart - HBCDD

■ / Technician: Yaling Tu
■ / Supervisor: Troy Chang



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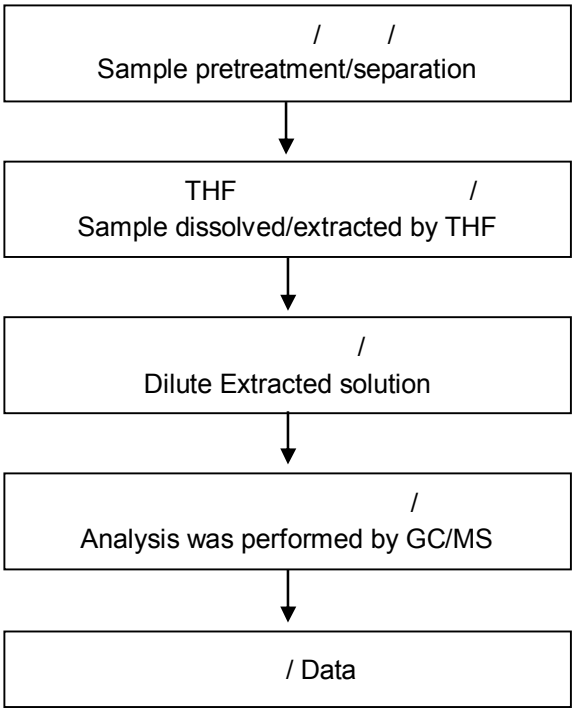
/ Analytical flow chart - Phthalate

- / Technician: Andy Shu
- / Supervisor : Troy Chang

/Test method: IEC 62321-8



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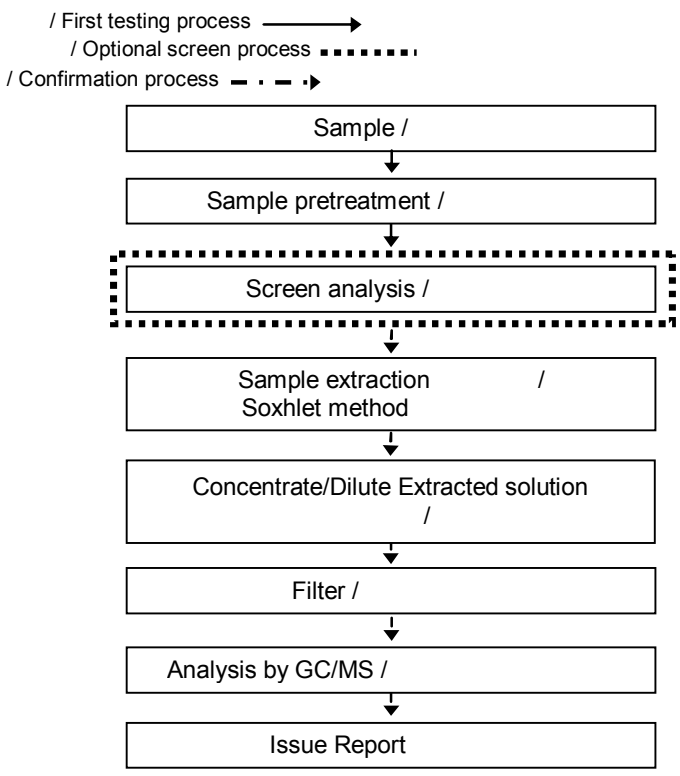
/ / Analytical flow chart - PBB/PBDE

- / Technician: Yaling Tu
- / Supervisor: Troy Chang



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* / . *
(The tested sample / part is marked by an arrow if it's shown on the photo.)

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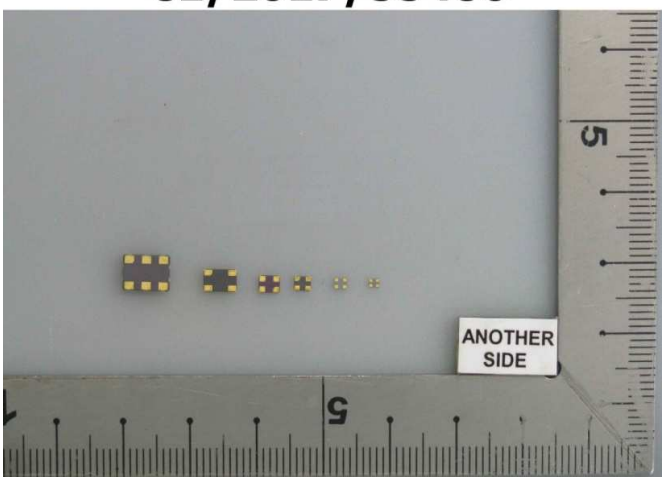

** (End of Report) **